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FIRST NAMED INVENTOR ATTORNEY DOCKET NO. CONFIRMATION NO. APPLICATION NO. FILING DATE 07/08/2003 John M. Harris CE10879R 9161 10/614,839 22917 11/21/2006 **EXAMINER** MOTOROLA, INC. REGO, DOMINIC E 1303 EAST ALGONQUIN ROAD ART UNIT PAPER NUMBER IL01/3RD SCHAUMBURG, IL 60196 2618

DATE MAILED: 11/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/614,839	HARRIS ET AL.
	Examiner	Art Unit
	Dominic E. Rego	2684
The MAILING DATE of this communication appears on the cover sheet with the correspondence address Period for Reply		
A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.  - Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).		
Status		
1) Responsive to communication(s) filed on <u>31 August 2006</u> .		
,— .	action is non-final.	
3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is		
closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213.		
Disposition of Claims		
4)⊠ Claim(s) <u>1-11,13-36 and 38-43</u> is/are pending in the application.		
4a) Of the above claim(s) is/are withdrawn from consideration.		
5) Claim(s) is/are allowed.		
6)⊠ Claim(s) <u>1-11,13-36 and 38-43</u> is/are rejected.		
7) Claim(s) is/are objected to.		
8) Claim(s) are subject to restriction and/or election requirement.		
Application Papers		
9)☐ The specification is objected to by the Examiner.		
10) The drawing(s) filed on is/are: a) accepted or b) objected to by the Examiner.		
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).		
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).		
11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.		
Priority under 35 U.S.C. § 119		
12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  a) All b) Some * c) None of:		
1. Certified copies of the priority documents have been received.		
<ul> <li>2. Certified copies of the priority documents have been received in Application No</li> <li>3. Copies of the certified copies of the priority documents have been received in this National Stage</li> </ul>		
application from the International Bureau (PCT Rule 17.2(a)).		
* See the attached detailed Office action for a list of the certified copies not received.		
Attachment(s)		
1) Notice of References Cited (PTO-892)	4) Interview Summary	(PTO-413)
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail D	ate
Information Disclosure Statement(s) (PTO/SB/08)     Paper No(s)/Mail Date	5) Notice of Informal F 6) Other:	-атент Аррисация

#### **DETAILED ACTION**

## Claim Objections

1. Claims 8-10,20-22,33-36, and 40-43 are objected to because of the following informalities: Claim set 8-10 is identical to claim set 20-22 where both sets depending on claim 1. Also, claim set 33-36 is identical to claim set 40-43 where both sets depending on claim 30. Appropriate correction is required.

# Claim Rejections - 35 USC § 103

- 2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
  - (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
- 3. Claims 1-5, 8-10,13,14,17-31,33-36,38,and 40-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rosen et al. (US Patent Application Publication #20030008657) in view of Drucker (US Patent #5,511110).

Regarding claim 1, Rosen teaches a method of reducing paging-related delays for anticipated target mobile stations (MS), the method comprising:

anticipating by a radio access network (RAN) (paragraph 0012) that an MS is likely to be a target of communication not yet initiated (Paragraphs 0070 and 0089:

Rosen teaches the infrastructure may send the wakeup trigger 412 to a target listener over some available common forward channels, such as forward paging channel and

forward common control channel, while the target listeners' traffic channels are not reestablished yet), except

## performing at least one of:

when a loading level of a serving cell of the MS is below an assignment threshold, assigning a traffic channel to the MS to avoid paging-related delays for the MS should the MS become a target of communication (Paragraphs 0007,0032,0070, 0087 and 0089) and

signaling the MS to transition to at one operational mode in which paging-related delays for the MS are reduced.

However, in related art, Drucker teaches signaling the MS to transition to at one operational mode in which paging-related delays for the MS are reduced (Col 4, line 1-22, line 44-67).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to use the teaching of signaling the MS to transition to at one operational mode in which paging-related delays for the MS are reduced, as taught by Drucker, in the Rosen device in order to improve the power conservation of cellular mobile units while decreasing mobile unit paging delay (Drucker, Col 4, line 1-3).

Regarding claim 2, the combination of Rosen and Drucker teach all the claimed elements in claim 1. In addition, Rosen teaches the method, wherein the loading level of the serving cell comprises a traffic channel loading level of the serving cell (Paragraph 0007).

Regarding claim 3, the combination of Rosen and Drucker teach all the claimed

elements in claim 1. In addition, Rosen teaches the method, further comprising: paging the MS in cells that have a loading level below the assignment threshold (*Figure 2*, element 214, paragraph 0032).

Regarding claim 4, the combination of Rosen and Drucker teach all the claimed elements in claim 3. In addition, Rosen teaches the method, wherein paging the MS comprises paging the MS in a manner that gives higher paging priority to pages for MSs for which communication has already been initiated (*Paragraph 0013, 0032, and 0036*).

Regarding claim 5, the combination of Rosen and Drucker teach all the claimed elements in claim 3. In addition, Rosen teaches the method, further comprising: receiving a page response from the MS that indicates an MS signal strength; assigning a traffic channel to the MS when the MS signal strength is above a signal strength threshold, even though communication targeting the MS has not been initiated yet (Paragraphs 0007, 0050, 0070, 0087 and 0089).

Regarding claims 8 and 20, the combination of Rosen and Drucker teach all the claimed elements in claim 1. In addition, Rosen teaches the method, wherein anticipating that an MS is likely to be a target of communication not yet initiated (not reestablished yet) comprises receiving an indication from the group consisting of an indication that the MS is newly available to a group of associated communication devices wherein each of the group of associated communication devices is related to the MS as a messaging buddy (voice chat), a presence query for the MS, a presence state update from the MS indicating that the MS is no longer in an offline presence state, an indication that a buddy of MS has become newly available, an indication that a

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message addressed to the MS is being composed, an indication that an address book listing associated with the MS has been recently accessed, an indication that messaging associated with the MS has been recently accessed, an indication that the MS requires emergency responder status, and an indication that the MS is in an active messaging mode (*Paragraphs 0004, 0038,0039,0041,0070, 0087, and 0089*).

Regarding claims 9 and 21, the combination of Rosen and Drucker teach all the claimed elements in claims 8 and 20. In addition, Rosen teaches the method, wherein the messaging associated with the MS comprises messaging from the group consisting of data burst messaging (DBM), short data burst (SDB) messaging, short message service (SMS) messaging, voice mail messaging, e-mail messaging, presence messaging, and Caller ID messaging (*Paragraphs 0009 and 0010*).

Regarding claims 10 and 22, the combination of Rosen and Drucker teach all the claimed elements in claims 8 and 20. In addition, Rosen teaches the method, wherein the indication that the MS is in an active messaging mode comprises recent messaging from the MS from the group consisting of data burst messaging, short message service (SMS) messaging, short data burst (SDB) messaging, and broadcast programming request messaging, wherein the indication that the MS is in an active messaging mode comprises recent messaging for the MS from the group consisting of data burst messaging, SMS messaging, SDB messaging, voice mail notification messaging, and email notification messaging (*Paragraphs 0004, 0009, 0010*).

Regarding claim 13, the combination of Rosen and Drucker teach all the claimed elements in claim 1. In addition, Rosen teaches the method, wherein signaling

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the MS comprises: in at least one cell in which a loading level is below an upper threshold, signaling the MS to transition to at least one operational mode in which paging-related delays for the MS are reduced (*Paragraphs* 0048,0049,0063,0070,0091,0106, and 0110).

Regarding claim 14, the combination of Rosen and Drucker teach all the claimed elements in claim 13. In addition, Rosen teaches the method, wherein the loading level comprises a paging channel loading level of the serving cell (*Paragraphs 0058 and 0095*).

Regarding claim 17, the combination of Rosen and Drucker teach all the claimed elements in claim 13. In addition, Rosen teaches the method, further comprising: when no response to previous signaling is received, signaling the MS, in at least one cell in which a loading level is above the upper threshold, to transition to at least one operational mode in which paging-related delays for the MS are reduced (*Paragraph 0007*).

Regarding claim 18, the combination of Rosen and Drucker teach all the claimed elements in claim 17. In addition, Rosen teaches the method, further comprising: when no response to previous signaling is received, signaling the MS, in at least one cell in which the MS has not yet been signaled, to transition to at least one operational mode in which paging-related delays for the MS are reduced (*Paragraph* 0007).

Regarding claim 19, the combination of Rosen and Drucker teach all the claimed elements in claim 1. In addition, Rosen teaches the method, wherein signaling

the MS comprises signaling the MS in a manner that gives higher signaling priority to MSs for which communication has already been initiated (*Paragraph 0013, 0032, and 0036*).

Regarding claim 23, the combination of Rosen and Drucker teach all the claimed elements in claim 20. In addition, Rosen teaches the method, wherein the group of associated communication devices includes a threshold number of members (Paragraphs 0024 and 0025).

Regarding claim 24, the combination of Rosen and Drucker teach all the claimed elements in claim 20. In addition, Rosen teaches the method, wherein the group of associated communication devices includes a threshold number of available members (*Paragraphs 0024 and 0025*).

Regarding claim 25, the combination of Rosen and Drucker teach all the claimed elements in claim 20. In addition, Rosen teaches the method, wherein the group of associated communication devices includes a threshold percentage of available members (*Paragraphs 0024 and 0025*).

Regarding claim 26, the combination of Rosen and Drucker teach all the claimed elements in claim 1. In addition, Rosen teaches the method, wherein the at least one operational mode comprises MS modes from the group consisting of a semi-dormant mode, an unslotted mode, a control hold mode, a speculative scanning mode, and a reduced slot cycle index (RSCI) mode, wherein the MS performs periodic location updates in the semi-dormant mode (*Paragraphs 0094 and 0107*).

Regarding claim 27, the combination of Rosen and Drucker teach all the

claimed elements in claim 26. In addition, Rosen teaches the method, wherein signaling the MS comprises signaling the MS to transition to the at least one operation mode for a particular period of time (*Paragraphs 0048,0049,0063,0070,0091,0106, and 0110*).

Regarding claim 28, the combination of Rosen and Drucker teach all the claimed elements in claim 26. In addition, Rosen teaches the method, wherein signaling the MS comprises signaling the MS to transition to the semi-dormant mode for a maximum number of reports (*Paragraph 0107*).

Regarding claim 29, the combination of Rosen and Drucker teach all the claimed elements in claim 1. In addition, Rosen teaches the method, further comprising: receiving an indication from the MS that MS battery life is low, wherein the at least one operational mode in which paging-related delays for the MS are reduced is limited to a reduced slot index mode (RSCI) (paragraphs 0095 and 0096).

Regarding claim 30, Rosen teaches a radio access network (RAN) comprising: wireless transceiver equipment adapted to support signaling transmission and reception for each cell of a plurality of cells; a communications controller, communicatively coupled to the wireless transceiver equipment for each cell of the plurality of cells (Paragraph 0012),

adapted to anticipate that a mobile station (MS) is likely to be a target of communication not yet initiated (Paragraphs 0070 and 0089: Rosen teaches the infrastructure may send the wakeup trigger 412 to a target listener over some available common forward channels, such as forward paging channel and forward common

control channel, while the target listeners' traffic channels are not re-established yet), except

adapted, to perform at least one of

assigning, when a loading level of a serving cell of the MS is below an assignment threshold, a traffic channel to the MS to avoid paging-related delays for the MS should the MS become a target of communication and

signaling the MS to transition to at least one operational mode in which pagingrelated delays for the MS are reduced.

However, in related art, Drucker teaches signaling the MS to transition to at least one operational mode in which paging-related delays for the MS are reduced (Col 4, line 1-22, line 44-67).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to use the teaching of signaling the MS to transition to at least one operational mode in which paging-related delays for the MS are reduced, as taught by Drucker, in the Rosen device in order to improve the power conservation of cellular mobile units while decreasing mobile unit paging delay (Drucker, Col 4, line 1-3).

Regarding claim 31, the combination of Rosen and Drucker teach all the claimed elements in claim 30. In addition, Rosen teaches the RAN, wherein the communications controller is further adapted to page the MS in cells that have a loading level below the assignment threshold (*Figure 2*, *element 214*, *paragraph 0032*).

Regarding claims 33 and 40, the combination of Rosen and Drucker teach all

the claimed elements in claim 30. In addition, Rosen teaches the RAN, wherein anticipating by the communications controller that an MS is likely to be a target of communication not yet initiated (not re-established yet) comprises receiving an indication from the group consisting of an indication that the MS is newly available to a group of associated communication devices wherein each of the group of associated communication devices wherein each of the group of associated communication devices is related to the MS as a messaging buddy (voice chat), a presence query for the MS, a presence state update from the MS indicating that the MS is no longer in an offline presence state, an indication that a buddy of MS has become newly available, an indication that a message addressed to the MS is being composed, an indication that an address book listing associated with the MS has been recently accessed, an indication that the MS requires emergency responder status, and an indication that the MS is in an active messaging mode (Paragraphs 0004, 0038,0039,0041,0070, 0087, and 0089).

Regarding claims 34 and 41, the combination of Rosen and Drucker teach all the claimed elements in claim 34. In addition, Rosen teaches the RAN, wherein the messaging associated with the MS comprises messaging from the group consisting of data burst messaging (DBM), short data burst (SDB) messaging, short message service (SMS) messaging, voice mail messaging, e-mail messaging, presence messaging, and Caller ID messaging (*Paragraphs 0009 and 0010*).

Regarding claims 35 and 42, the combination of Rosen and Drucker teach all the claimed elements in claim 33. In addition, Rosen teaches the RAN, wherein the

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indication that the MS is in an active messaging mode comprises recent messaging from the MS from the group consisting of data burst messaging, short message service (SMS) messaging, short data burst (SDB) messaging, and broadcast programming request messaging, wherein the indication that the MS is in an active messaging mode comprises recent messaging for the MS from the group consisting of data burst messaging, SMS messaging, SDB messaging, voice mail notification messaging, and email notification messaging (*Paragraphs 0004, 0009, 0010*).

Regarding claims 36 and 43, the combination of Rosen and Drucker teach all the claimed elements in claim 30. In addition Rosen teaches the RAN, wherein the at least one operational mode comprises MS modes from the group consisting of a semi-dormant mode, an unslotted mode, a control hold mode, a speculative scanning mode, and a reduced slot cycle index (RSCI) mode, wherein the MS performs periodic location updates in the semi-dormant mode (*Paragraphs 0094 and 0107*).

Regarding claim 38, the combination of Rosen and Drucker teach all the claimed elements in claim 30. In addition, Rosen teaches the RAN, wherein signaling the MS comprises: in at least one cell in which a loading level is below an upper threshold, signaling the MS to transition to at least one operational mode in which paging-related delays for the MS are reduced (*Paragraphs* 0048,0049,0063,0070,0091,0106, and 0110).

4. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rosen et al. (US Patent Application Publication #20030008657) in view Drucker (US Patent #5,511110) and in further in view of Cheng et al. (US Patent #6,353,602).

Regarding claim 6, the combination of Rosen and Drucker teach all the claimed elements in claim 1, except for the method, further comprising: receiving a page response from the MS that indicates a number of MS signaling legs; assigning a traffic channel to the MS when the number of MS signaling legs is below a signaling-leg threshold, even though communication targeting the MS has not been initiated yet.

However, in related art, Cheng teaches the method, further comprising: receiving a page response from the MS that indicates a number of MS signaling legs; assigning a traffic channel to the MS when the number of MS signaling legs is below a signaling-leg threshold, even though communication targeting the MS has not been initiated yet (See abstract and Column 6, line 21-31).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to use the teaching of the method, further comprising: receiving a page response from the MS that indicates a number of MS signaling legs; assigning a traffic channel to the MS when the number of MS signaling legs is below a signaling-leg threshold, even though communication targeting the MS has not been initiated yet, as taught by Cheng, in the combination of Rosen and Drucker device in order to receive or transmit voice data through the traffic channel.

5. Claims 7,11,15,16, 32, and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rosen et al. (US Patent Application Publication #20030008657) in view Drucker (US Patent #5,511110) and further in view of Diaz et al. (US Patent #5,442,809).

Regarding claim 7, the combination of Rosen and Drucker teach all the claimed elements in claim 1, except for the method, further comprising: signaling the MS in at least one cell that has a loading level between the assignment threshold and an upper threshold to transition to at least one operational mode in which paging-related delays for the MS are reduced.

However, in related art, Diaz teaches the method, further comprising: signaling the MS in at least one cell that has a loading level between the assignment threshold and an upper threshold to transition to at least one operational mode in which paging-related delays for the MS are reduced (Col. 2, line 8-21).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to use the teaching of the method, further comprising: signaling the MS in at least one cell that has a loading level between the assignment threshold and an upper threshold to transition to at least one operational mode in which paging-related delays for the MS are reduced, as taught by Diaz, in the combination of Rosen and Drucker device in order to save battery power by transitioning to the exact mode.

Regarding claim 11, the combination of Rosen, Drucker and Diaz teach all the claimed elements in claim 7. In addition, Rosen teaches the method, wherein the at

least one operational mode comprises MS modes from the group consisting of a semi-dormant mode, an unslotted mode, a control hold mode, a speculative scanning mode, and a reduced slot cycle index (RSCI) mode, wherein the MS performs periodic location updates in the semi-dormant mode (*Paragraphs 0094 and 0107*).

Regarding claim 15, the combination of Rosen and Drucker teach all the claimed elements in claim 13, except for the method, wherein signaling the MS comprises: signaling the MS in at least one cell that has a loading level between an assignment threshold and the upper threshold to transition to at least one operational mode in which paging-related delays for the MS are reduced.

However, in related art, Diaz teaches the method, wherein signaling the MS comprises: signaling the MS in at least one cell that has a loading level between an assignment threshold and the upper threshold to transition to at least one operational mode in which paging-related delays for the MS are reduced.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to use the teaching of the method, wherein signaling the MS comprises: signaling the MS in at least one cell that has a loading level between an assignment threshold and the upper threshold to transition to at least one operational mode in which paging-related delays for the MS are reduced, as taught by Diaz, in the combination of Rosen and Drucker device in order to save battery power by transitioning to the exact mode.

Regarding claim 16, the combination of Rosen and Drucker teach all the claimed elements in claim 15. In addition, Rosen teaches the method, wherein cells that

have a loading level between the assignment threshold and the upper threshold associated with one of three groups according to their individual loading levels, a high load group, a medium load group, and a low load group, and wherein signaling comprises:

signaling the MS in at least one cell in the high load group to transition to a reduced slot cycle index (RSCI) mode (*Paragraphs 0095 and 0096*); signaling the MS in at least one cell in the medium load group to transition to a semi-dormant mode, wherein the MS performs periodic location updates in the semi-dormant mode; signaling the MS in at least one cell in the low load group to transition to a control hold mode (*Paragraphs 0105-0107*).

Regarding claim 32, the combination of Rosen and Drucker teach all the claimed elements in claim 30, except for the RAN, wherein the communications controller is further adapted to signal the MS in at least one cell that has a loading level between the assignment threshold and an upper threshold to transition to at least one operational mode in which paging-related delays for the MS are reduced.

However, in related art, Diaz teaches the RAN, wherein the communications controller is further adapted to signal the MS in at least one cell that has a loading level between the assignment threshold and an upper threshold to transition to at least one operational mode in which paging-related delays for the MS are reduced.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to use the teaching of the RAN, wherein the communications controller is further adapted to signal the MS in at least one cell that

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has a loading level between the assignment threshold and an upper threshold to transition to at least one operational mode in which paging-related delays for the MS are reduced, as taught by Diaz, in the combination of Rosen and Drucker device in order to save battery power by transitioning to the exact mode.

Regarding claim 39, the combination of Rosen and Drucker teach all the claimed elements in claim 38, except the RAN, wherein signaling the MS comprises: signaling the MS in at least one cell that has a loading level between an assignment threshold and the upper threshold to transition to at least one operational mode in which paging-related delays for the MS are reduced.

However, in related art, Diaz teaches the RAN, wherein signaling the MS comprises: signaling the MS in at least one cell that has a loading level between an assignment threshold and the upper threshold to transition to at least one operational mode in which paging-related delays for the MS are reduced.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to use the teaching of the RAN, wherein signaling the MS comprises: signaling the MS in at least one cell that has a loading level between an assignment threshold and the upper threshold to transition to at least one operational mode in which paging-related delays for the MS are reduced, as taught by Diaz, in the combination of Rosen and Drucker device in order to save battery power by transitioning to the exact mode.

### Response to Arguments

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6. Applicant's arguments with respect to claims 1-11,13-35, and 38-43 have been considered but are most in view of the new ground(s) of rejection.

### Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dominic E. Rego whose telephone number is 571-272-8132. The examiner can normally be reached on Monday-Friday, 8:30 am-5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung can be reached on 571-272-7882. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Dominic E. Rego

QUOCHIEN B. VUONG PRIMARY EXAMINER

Minthen Ba always 11/09/08